WISCONSIN BEGINS SNOW SURVEY.

[Reprinted from Engineering News-Record, New York, Jan. 27, 1921, p. 181.]

On selected main highways in Wisconsin records are being kept this winter of the character and extent of snow movement by the wind; of drift formation, location, and magnitude, and all similar facts in connection with the accumulation of snow on these roads. Reports will be made on simple forms which, in addition to the snow data, call for suggestions as to means of prevention of drifts by windbreaks, fences, hedges, etc. It is believed that with such records plans may be formulated for barriers and other drift preventives which will materially reduce obstruction of highways. While the surveys are being conducted by country highway commissions, the routes surveyed are selected by the State Highway Commission, J. T. Donaghey, maintenance engineer.

ZONAL VARIATION OF THE YEARLY MARCH OF AIR TEMPERATURE.[1]

By F. K. VON MARILAUN.

[Reprinted from Science Abstracts, Dec., 1920, § 1239.]

The mean monthly temperature of zones each comprising 10° of latitude, as given by Hopfner (Petermann's geogr. Mitt. 52, 1906), are analyzed by obtaining the first three terms of Bessel's formula, this number giving sufficient approximation. Combining these terms, the times of maximum and minimum temperature for each zone are tabulated, together with the percentage of sea cover in each zone, thus bringing into prominence the tendency for greater lag with greater sea cover. The increase of yearly range of temperature with increased land cover is similarly exhibited and the relation is approximately linear if the range be divided by the latitude.

In the second paper the assumption often made that with a water hemisphere the zonal temperature decreases as cos ϕ, and with a land hemisphere as $\cos^2 \phi$ is tested for such zonal temperatures partly empirical, partly theoretical, given by various authors. This rate of decrease is not found in any case. For a water hemisphere a good fit is obtained by using the expression $\cos^m \phi$, m being a function of ϕ, not the same for all the authors. The form of m is, however, $a-b \cos \phi$ in three out of the seven cases examined, a being near 2 and b near 1. This indicates a decrease proportional to cos ϕ at the equator and to $\cos^2 \phi$ at the pole. For a land hemisphere the expression $\cos^m \phi$ is also found suitable, but only with three authors out of five does m indicate a greater rate of decrease than with a water hemisphere.—*M. A. G.*

[1] Akad. Wiss., Vienna, vol. 128, 2a, 1919, pp. 145–174.

BIBLIOGRAPHY.

RECENT ADDITIONS TO THE WEATHER BUREAU LIBRARY.

C. FITZHUGH TALMAN, Professor in Charge of Library.

The following have been selected from among the titles of books recently received as representing those most likely to be useful to Weather Bureau officials in their meteorological work and studies:

Alfani, Guido.
Riflessioni sul terremoto del Alpi Apuane (7 settembre 1920). Milan. 1920. 20 p. 24½ cm. (Pubbl. dell'Osservatorio Ximeniano dei PP. Scolopi, Firenze. Num. 127.)

Batavia. K. Magnetisch en meteorologisch observatorium.
Maand- en jaargemiddelden van den regenval voor 1977 waarnemingsplaatsen in Nederlandsch-Indië . . . 1879–1917. Weltevreden. 1920. 167 p. 27 cm.

Coronas, José.
Climate and weather of the Philippines, 1903–1918. Manila. 1920. 195 p. 23 cm.

Exner, Felix M. v.
Meteorologische Erfahrungen im Kriege. Wien. 1918. 34 p. 18½ cm. (Vorträge des Vereines zur Verbreitung naturw. Kenntnisse in Wien. 58. Jahrg. 9. Heft.)

Hellmann, G[ustav].
Beiträge zur Erfindungsgeschichte meteorologische Instrumente. Berlin. 1920. 59 p. 27 cm. (Einzelausgabe aus den Abh. der Preuss. Akad. der Wissensch. Jahrg. 1920. Phys.-math. Klasse, Nr. 1.)

Kassner, C[arl].
Das Klima der Sommermonate in Norddeutschland. Berlin. [n. d] p. 177–355. 28 cm. (Sonderab. Veröffentlichungen der Zentralstelle für Balneologie, Band 3, Heft 7–10.)

McAdie, Alexander.
Records of night cloudiness for astronomers. [n. p.] 1920. 7 p. 23 cm. (Reprinted from Publications of the Astronomical society of the Pacific, no. 190.) [Urges widespread use of pole-star recorders.]

Massarini, Iginia.
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Sobre una fórmula para calcular la temperatura media de una localidad, en función de su latitud y de su altura sobre el nivel del mar. Barcelona. 1920. p. 305–309. 29½ cm. (Memorias de la R. Academia de ciencias y artes de Barcelona. Terc. época. Vol. 16, no. 5.)

Quervain, Alfred de, & Mercanton, P.-L.
Ergebnisse der Schweizerischen Grönlandexpedition 1912–1913. Teil 1–4. Zürich. 1920. 20,402 p. 30 cm. (Denkschriften der Schweizerischen Naturforschenden Gesellschaft. Bd. 53.)

Waller, Adolph E.
Relation of plant succession to crop production. Columbus. 1921. 74 p. 25 cm. (Ohio state univ. bull., vol. 25, no. 9. Contrib. in botany, no. 117.) [Includes discussion of climatic factors.]

West, Frank L., & Edlefsen, N. E.
Freezing of fruit buds. Washington. 1921. p. 655–662. 25 cm. [Excerpted from Journal of agricultural research, vol. 20, no 8. Jan. 15, 1921.] [Abstract, pp. 21–22, above.]

RECENT PAPERS BEARING ON METEOROLOGY AND SEISMOLOGY.

C. F. TALMAN, Professor in Charge of Library.

The following titles have been selected from the contents of the periodicals and serials recently received in the Library of the Weather Bureau. The titles selected are of papers and other communications bearing on meteorology and cognate branches of science. This is not a complete index of all the journals from which it has been compiled. It shows only the articles that appear to the compiler likely to be of particular interest in connection with the work of the Weather Bureau.

Akademie der Wissenschaften. Sitzungsberichte. Wien. Bd. 128. 1919.

Schweidler, Egon. Beiträge zur Kenntnis der atmosphärischen Elektrizität. Nr. 60. Über das Gleichgewicht zwischen ionenerzeugenden und ionenvernichtenden Vorgängen in der Atmosphäre. II. Mitteilung. H. 6. p. 947–955.

Ficker, Heinrich. Veränderlichkeit des Luftdruckes und der Temperatur in Russland zwischen Eismeer und 37° Nordbreite. H. 9. p. 1301–1341.